DRUGGED DRIVING CONFERENCE

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POLY DRUG USE, THE DOWN SIDE, AND OTHER RELEVANT ISSUES

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Poly Drug Use – Drug Combinations

Poly Drug Use: When a person ingests drugs from two or more different drug categories.

- The body will exhibit a combination of effects.

Poly Drug cases can be some of the more difficult cases for the DRE to evaluate. Due to the fact that the defendant has multiple drugs in his/her system, however, there may be less jury appeal for the defendant. Accordingly, they may be easier to prosecute.

Note: the crime lab may only quantify some or even none of the drugs. At times the lab cannot test for all of the drugs in the system due to insufficient blood or lack of testing methods. In most cases, this should not prevent us from proceeding on the case.

Alcohol is a drug. It is the most common drug used in combination with other drugs. Alcohol combined with cannabis/marijuana is currently the most common drug combination we see in Arizona.

Potential Effects of Poly Drug Use

Four types of combined effects can, and generally will, occur when two or more drug categories are used together:

- Null Effect
- Overlapping Effect
- Additive Effect
- Antagonistic Effect

Types of Combined Effects

Null Effect

The simplest way to explain the null effect is using the phrase:

"zero + zero = zero"

Example: when a subject consumes one drug, which does not cause HGN, and they ingest another drug, which does not cause HGN, then the officer should not expect to see HGN.

Another example of the null effect is the pupil size of a suspect who was under the influence of Dissociative Anesthetic and a CNS Depressant.

Dissociative Anesthetics do not affect pupil size and neither do CNS Depressants. The combination of these drugs should not affect the size of the pupils.

If neither drug affects some particular indicator of impairment, then their combination also will not affect/cause that indicator.

Overlapping Effect

The overlapping effect comes into play when one drug does affect an indicator of impairment and the other drug has no effect on that indicator. In that situation, their combination also will affect that behavior.

"Action + Nothing = Action"

Example: when a subject consumes one drug, which does not cause HGN, and they ingest another drug, which does cause HGN, then the officer should expect to see HGN if enough of the drug was consumed.

Additive Effect

The additive effect occurs when two drug categories affect the same indicator in the same way. In that case, their combination also will affect that behavior – to a greater degree.

In other words, the effects 'add together' or reinforce each other to produce a greater effect than one of the drugs could produce individually.

The additive effects may cause the indicators to be exaggerated.

Action + Action = Greater Action

Pupils may be dilated. What you see with HGN usually will not be consistent with the BAC.

VGN usually will not be present unless it is a high dose for that individual. The combination may allow the VGN to be observed at a low BAC.

Antagonistic Effect

An antagonistic effect occurs when two drug categories affect an indicator in exactly the opposite ways. In these cases, their combined effect will be unpredictable.

Action + Opposite Action = Unpredictable

For example:

- Stimulant use results in dilated pupils while narcotic analgesics cause the pupils to be constricted
- An officer may observe normal, constricted, or dilated pupils due to the antagonistic effect

When we deal with an antagonistic effect, we cannot always predict the outcome effect.

The effects that you will see will be dependent on which drug is more dominant in the system at any given time.

Example:

- If the stimulant is the psychoactive drug in the system, the pupils may be dilated
- If the narcotic analgesic is more psychoactive drug, the pupils may be constricted
- If the drugs are acting on the system in an equal manner you may see normal pupils

"Action plus opposite action will be unpredictable"

Cannabis/Marijuana and Alcohol in Combination

Alcohol combined with cannabis/marijuana is currently the most common drug combination. Because of this, there is more research on the link between the two than there is with other drug combinations. Studies show the risk of driving under the influence of both alcohol and cannabis is greater than the risk of driving under the influence of either alone.

It is worth reviewing the studies to assist with these types of cases.

Chesher G. *The Effects of Alcohol and Marijuana in Combination: A Review*. Alcohol, Drugs and Driving 1986;2:105-119. [Marijuana and alcohol, when used together, have additive or even multiplicative effects on impairment.]

Sewell, Poling and Sofuoglu *The Effect of Cannabis Compared with Alcohol on Driving.* Am J. Addit. 2009;18(3): 185 – 193. [Together, the effects of using marijuana and alcohol together are additive and may even be synergistic.]

> "Detrimental effects of cannabis use vary in a dose-related fashion, and are more pronounced with highly automatic driving functions than with more complex tasks that require conscious control, whereas with alcohol produces an opposite pattern of impairment. Because of both this and an increased awareness that they are impaired, marijuana smokers tend to compensate effectively while driving by utilizing a variety of behavioral strategies. Combining marijuana with alcohol eliminates the ability to use such strategies effectively, however, and results in impairment even at doses which would be insignificant were they of either drug alone."